Appendix H

Appendix H
Profiles of Selected Utilities without Projected Water Supply Shortfalls Prior to 2020[1]

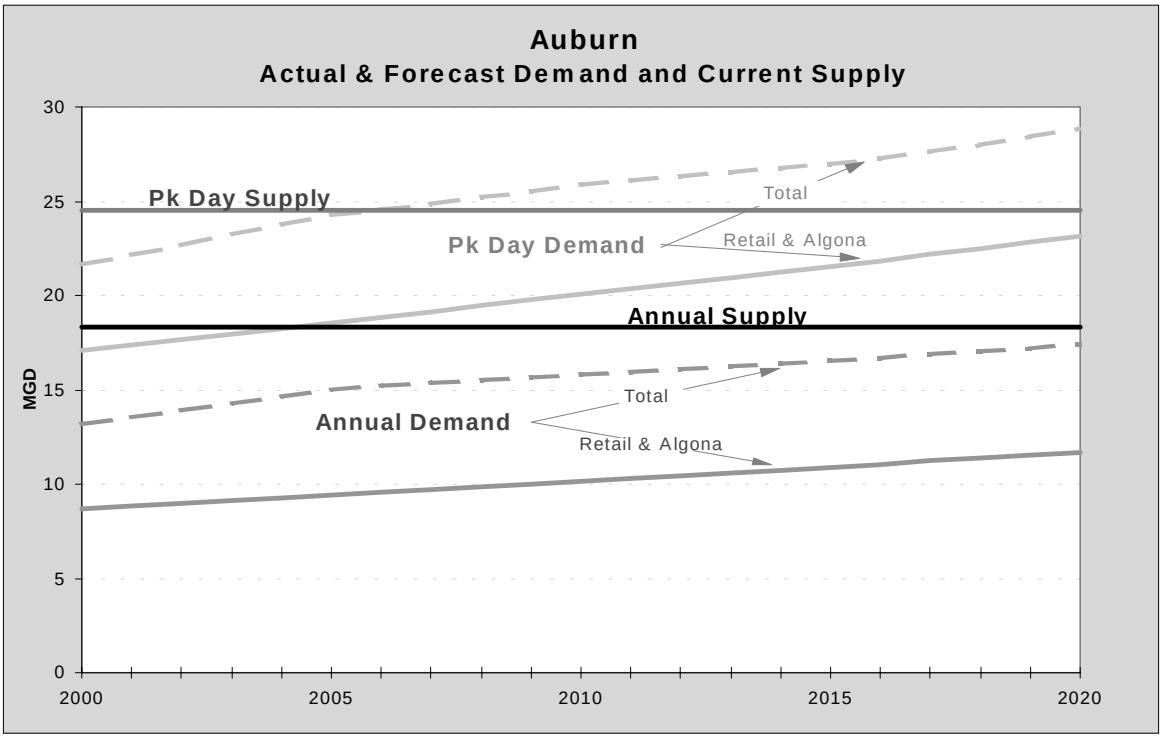
Auburn

Source of Supply: Ground Water
Annual Yield (Qa): 18.3 mgd, constrained by fisheries agreement with Muckleshoot
Peak Yield (Qi): 24.5 mgd, constrained by fisheries agreement with Muckleshoot

	2000	2010 Forecast	% Growth 2000-2010	2020 Forecast	% Growth 2000-2020
Annual Demand in mgd:*:	8.8	10.2	16%	11.7	33%
Peak Demand in mgd*:	17.1	20.1	18%	23.2	36%
Households:	19,875	24,125	22%	27,446	38%

* Represents demand for Auburn's retail service area plus its uninterruptible wholesale contract (Algona). Interruptible wholesale contracts add 5 to 6 mgd of additional demand.

Type of Supply Constraint: Peak day
Year in which Constraint is Reached: Beyond 2020 for retail and uninterruptible contracts



[1] Source: Developed by SPU staff, based upon the 2001 Central Puget Sound Regional Water Supply Outlook and report entitled "Water Demand and Sources of Supply in King County."

Auburn relies upon ground water (7 wells and 2 springs), primarily in the Auburn-Kent Valley, for its water supply. Auburn holds primary water rights and claims providing a total instantaneous quantity (Qi) of 27.0 mgd and an annual quantity (Qa) of 20.8 mgd. Due to a stipulated order of agreement to support the fisheries interests of the Muckleshoot Indian Tribe, the actual available supplies are limited to 24.5 mgd on an instantaneous basis and 18.3 mgd on an average annual basis. Auburn's current retail demand is about 8 mgd, which is expected to rise to about 11 mgd by 2020.

The City of Auburn (Auburn) currently provides an uninterruptible supply of water to its retail customers and to the City of Algona (Algona). Additionally, Auburn has wholesale contracts with the Covington Water District (Covington) and King County Water District No. 111 (Water District 111). These contracts provide for an interruptible supply of water to be delivered to the two districts. Because of these agreements, Auburn is likely the preferred supplier for Covington and Water District 111 in the event that their demands exceed their own supplies. Aside from these contracts, Auburn also has an agreement with the City of Pacific (Pacific) to provide water on an emergency-only basis.

As presented in its Draft 2000 Comprehensive Water Plan (Plan), Auburn has existing average day available supply sufficient to meet total projected retail and wholesale average day demands. Auburn's maximum day available supply is sufficient to meet the forecast demands associated with its retail customers and the wholesale contract with Algona through 2020; however, the future maximum day wholesale demands associated with Covington and Water District 111 can not be met with the available supply. The total maximum day demand for Auburn and its wholesale customers exceeds the available instantaneous supply in 2006. This is one of the reasons for the listing of these two utilities as having potential shortfalls before 2020 (see Sections 5.3.3 and 5.3.6). Additionally, Pacific is also identified as an individual utility whose maximum day demand exceeds its own supplies (see Section 5.3.8). Because of its emergency agreement with Auburn, it is reasonable to expect that Pacific will look to Auburn as a more substantial supplier of water as peak demands exceed their own supplies more frequently in the future.

While able to meet the needs of its retail customers through 2020, Auburn has begun to investigate the development of additional water supplies to address the potential future demands associated with wholesale customers. One option is further development of Auburn's primary production aquifer. It is uncertain at this time how much, if any, additional supply can be obtained from this source, given that needs associated with tribal fishing rights, fisheries requirements, and maintenance of flows in the Green and White Rivers must be taken into consideration. Another supply option would involve purchasing water from a regional supplier. At this time Auburn is not considering purchasing water from SPU due to the costs involved, but preliminary discussions are underway with the Lakehaven Utility District, a regional supplier that shares a border with Auburn.

Although not a current participant in the Tacoma Second Supply Pipeline (SSP), tapping into the SSP may become a feasible option once the project is completed. Other water supply options for Auburn, as presented in its Plan, include artificial storage and recovery, wastewater reuse, stormwater reuse, and transfer of existing water rights from another party.

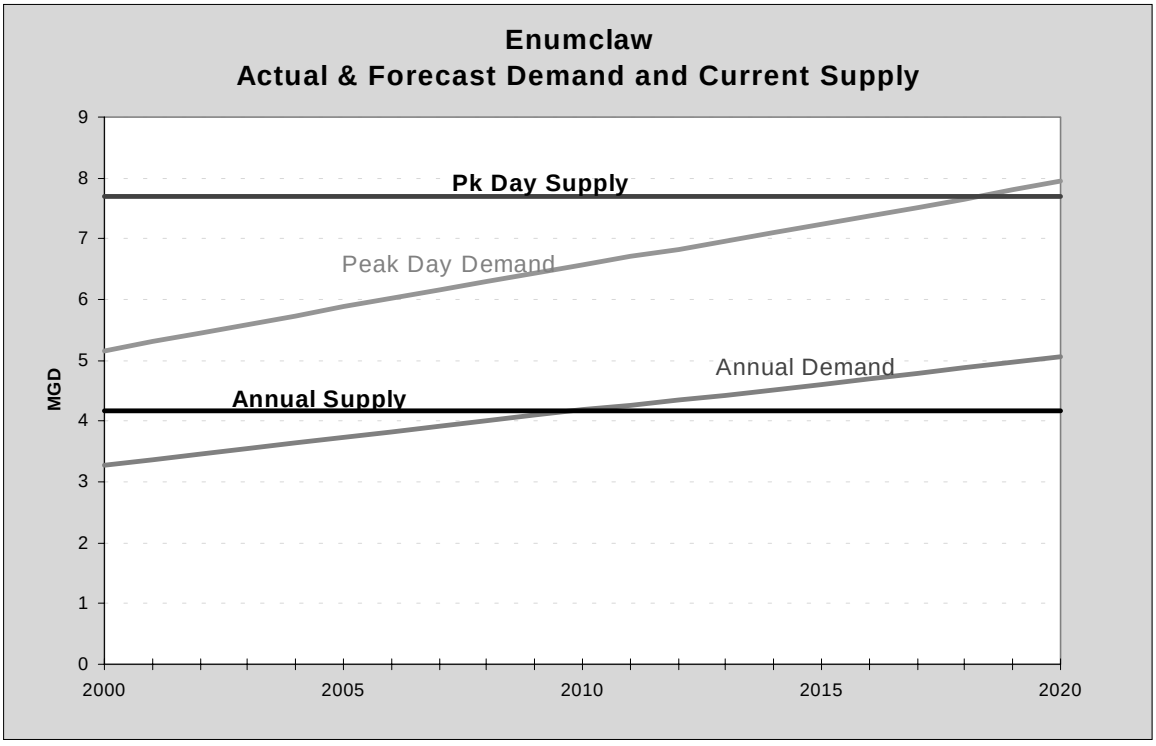
At this time, no option has been chosen and consequently, there is no quantifiable increase in Auburn's supply that can be applied toward the wholesale customer water supply deficit projected to occur beginning in 2006. However, those individual utilities that may be affected by such a shortfall are evaluating their own supply alternatives, as discussed in Section 5.3.

Enumclaw

Source of Supply: Ground Water, Springs
Annual Yield (Qa): 4.2 mgd
Peak Yield (Qi): 7.7 mgd

	2000	2010 Forecast	% Growth 1998-2010	2020 Forecast	% Growth 1998-2020
Annual Demand:	3.3 mgd	4.2 mgd	27%	5.1 mgd	55%
Peak Demand:	5.2 mgd	6.6 mgd	27%	7.9 mgd	52%
PSRC Households:	6,352	7,709	21%	8,021	26%

Type of Supply Constraint: Annual
Year in which Constraint is Reached: 2010, beyond 2020 with purchases from Tacoma.
Current Status: Enumclaw has an agreement with Tacoma to purchase up to 1 mgd of water through the existing Green River Transmission Pipeline.



Enumclaw has two springs and two wells with combined annual water rights of 4.2 mgd and instantaneous water rights of 7.7 mgd. No constraints on the full use of these water rights are reported. Enumclaw projects that its water demand will increase by more than 50 percent by the year 2020. Given this demand forecast, Enumclaw has enough peak capacity from its own sources to meet peak day demand until 2019. However, annual supply capacity will be reached by 2010. Recently, Tacoma has agreed to provide Enumclaw with up to 1 mgd of additional water on an annual basis through its existing pipeline. This pipeline passes right through downtown Enumclaw and the connection has already been made. With the block of water from Tacoma, Enumclaw has sufficient supply to meet forecast demand through 2020.

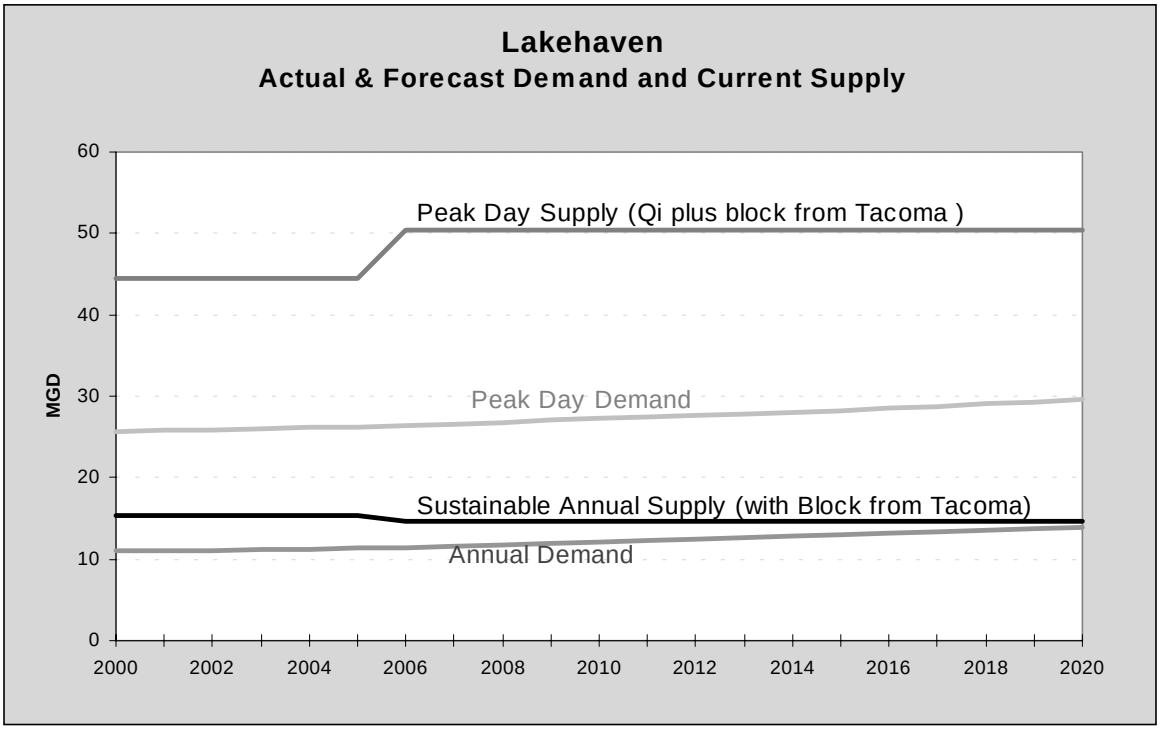
It should be noted that Enumclaw is half way through a massive distribution main replacement program to correct a serious leak problem that has resulted in non-revenue water in excess of 35 percent of total water production. The demand forecast provided by Enumclaw does not reflect the anticipated decline in non-revenue water that could reduce demand by as much as 25 percent when the project is complete. It is therefore possible that Enumclaw's current supply sources are sufficient to meet demand for an even longer period of time than described above.

Lakehaven

Source of Supply: Ground Water, Tacoma
Annual Yield (Qa): 10.1 mgd, constrained by sustainability problems (own source only)
Peak Yield (Qi): 42.4 mgd, constrained by water right

	2000	2010 Forecast	% Growth 2000-2010	2020 Forecast	% Growth 2000-2020
Annual Demand:	10.6 mgd	12.2 mgd	15%	13.8mgd	30%
Peak Demand:	20.6 mgd	27.1 mgd	32%	29.6 mgd	44%
PSRC Households:	37,890	46,504	23%	54,533	44%

Type of Supply Constraint: Annual
Year in which Constraint is Reached: 1994 with own supply, beyond 2020 with Tacoma block
Current Status: Lakehaven is participating in the Second Supply Project (SSP) and is also looking at using excess winter water from Tacoma and possible treated wastewater from its own plants for aquifer recharge.



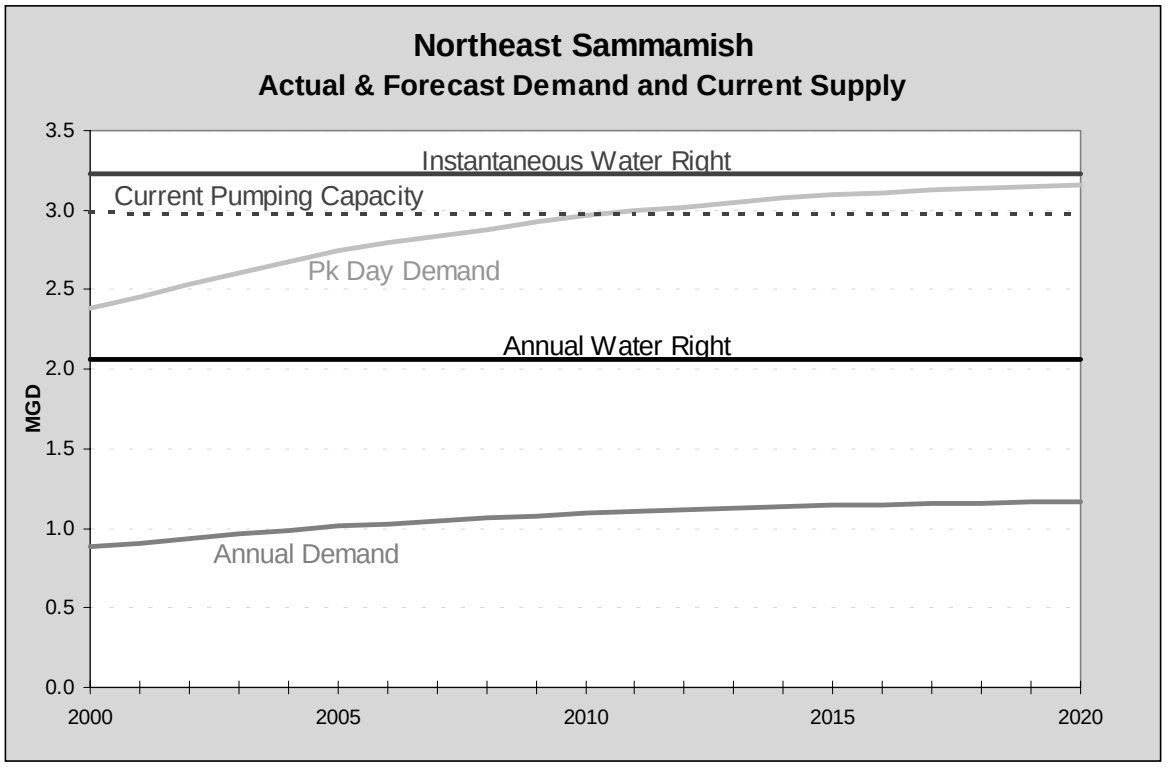
Lakehaven obtains its water from 4 aquifer zones and 20 active wells with combined water rights of 18.0 mgd annual and 42.4 mgd instantaneous. Full use of these water rights though are seriously limited by sustainability problems. It is estimated that the maximum sustainable rate of withdrawal is 10.1 mgd on an average annual basis. Unlike most of its neighbors in south King County, Lakehaven is constrained by the *annual* volume of water it can produce, not by peak day capacity. Annual demand for water in Lakehaven is currently 10.6 mgd, already slightly more than Lakehaven's annual supply capacity from its own sources. Agreements with Tacoma in 1995 and 1998 to purchase water extended its ability to meet annual demand to just beyond 2020. Peak day demand, currently at about 21 mgd and projected to rise to 30 mgd by 2020, is far below Lakehaven's peak capacity. With the completion of a new transmission pipeline in 2000 (which is intended to become the western portion of the SSP), Lakehaven is now able to purchase up to 5.3 mgd annually (7 mgd in the winter and 2 mgd in the peak season) from Tacoma. When the SSP is completed, those amounts will change to 4.6 mgd annually and 8 mgd peak day. Lakehaven is also looking at using excess winter water from Tacoma and possibly treated wastewater from its own plants for aquifer recharge.

Northeast Sammamish

Source of Supply: Ground Water
Annual Yield (Qa): 2.1 mgd, constrained by water right
Peak Yield (Qi): 3.2 mgd, constrained by water right (current pumping capacity is 3.0 mgd)

	1998	2010 Forecast	% Growth 1998-2010	2020 Forecast	% Growth 1998-2020
Annual Demand:	0.8 mgd	1.1 mgd	38%	1.2 mgd	48%
Peak Demand:	2.2 mgd	3.0 mgd	38%	3.2 mgd	48%
PSRC Households:	2,774	3,575	29%	4,065	47%

Type of Supply Constraint: Peak Day
Year in which Constraint is Reached: Never (Claims no demand growth beyond 2020)
Current Status: No constraints through 2020.



Northeast Sammamish has 5 wells with an annual water right (Qa) of 2.1 mgd and an instantaneous water right (Qi) of 3.2 mgd. Current pumping capacity is slightly less than that at 3.0 mgd. Peak demand at buildout is projected at just below 3.2 mgd so the district intends to rehabilitate some of the wells to bring their capacity up to the water right. An additional storage tank to help meet fire flow and peak day requirements may also be built. The system would be constrained by peak capacity before it would be by annual capacity but Northeast Sammamish projects that its peak demand will approach but never quite reach its peak supply capacity. Northeast Sammamish staff conclude that, "Current supply appears sufficient to meet demands of the District when District is built out based on existing zoning."